FIG. 1

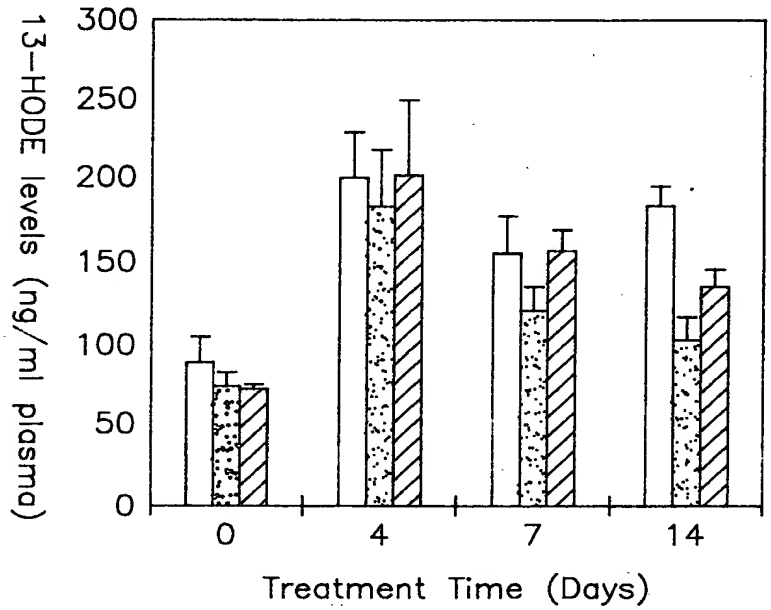


FIG. 1A

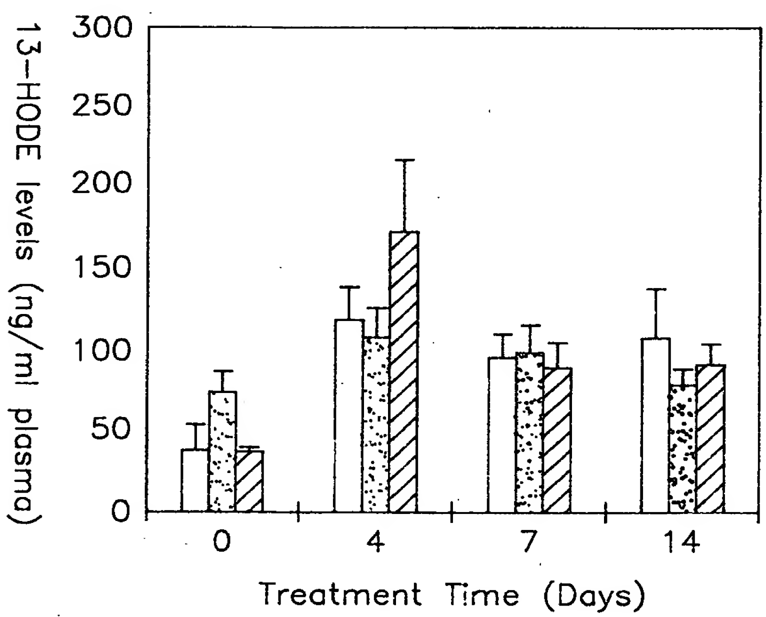


FIG. 2

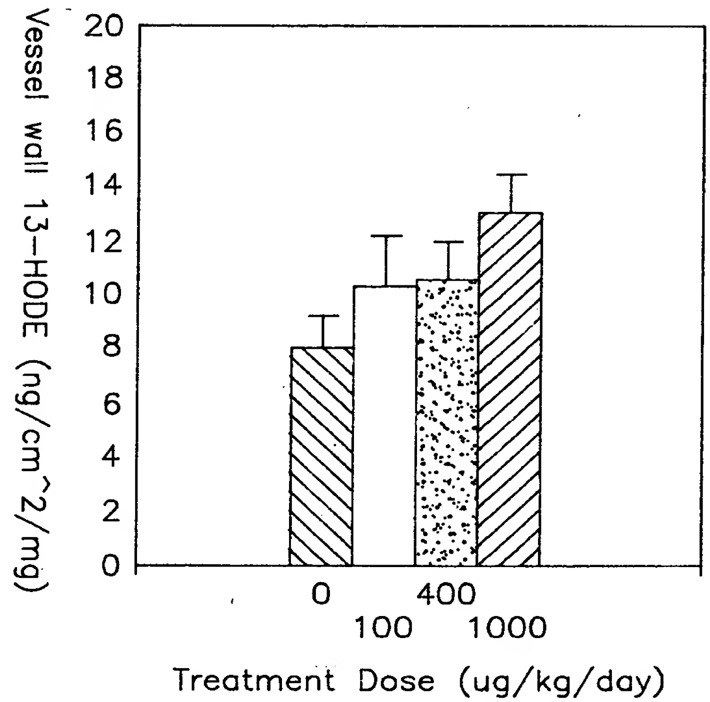
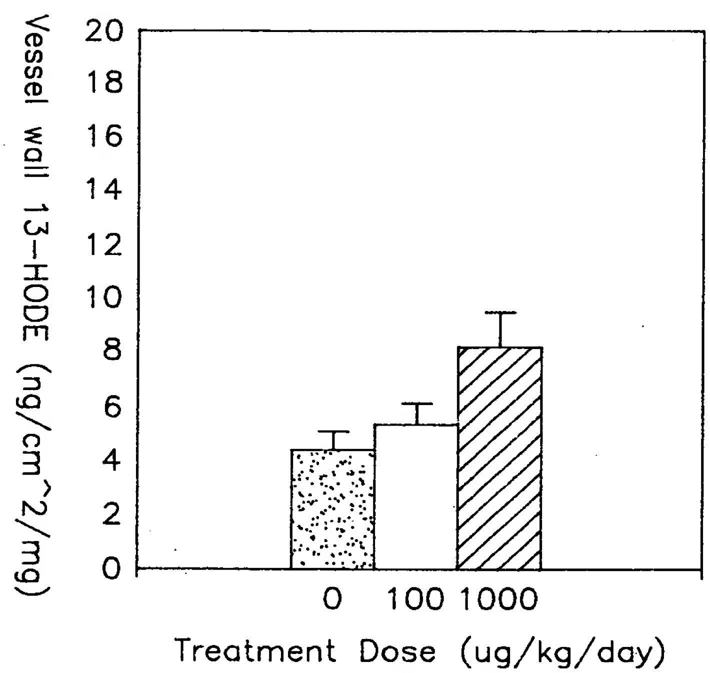
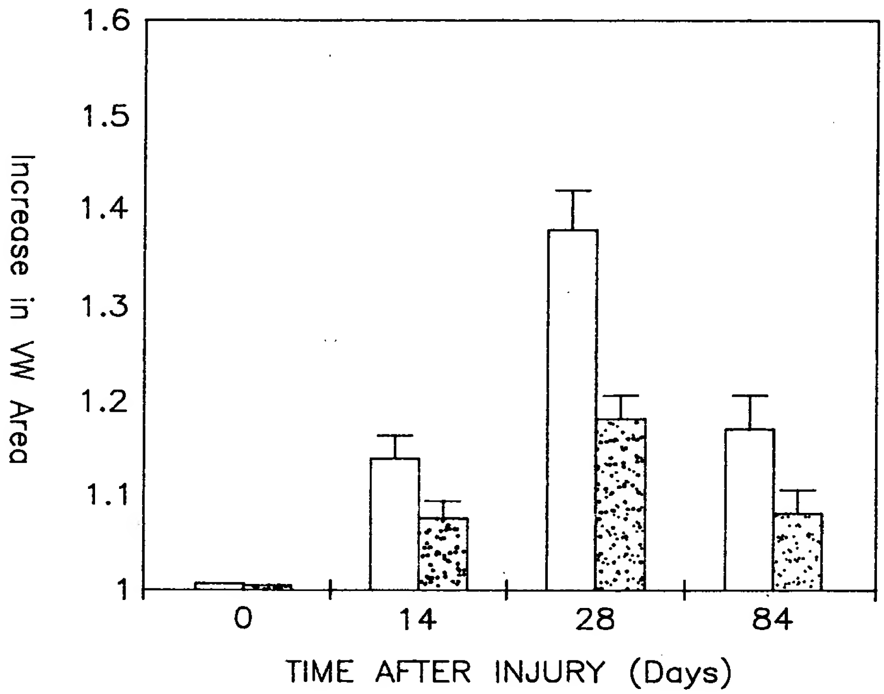


FIG. 2A



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG. 3



APPROVED BY DRAFTSMAN	O.G. FIG.	
	CLASS	SUBCLASS

FIG. 4

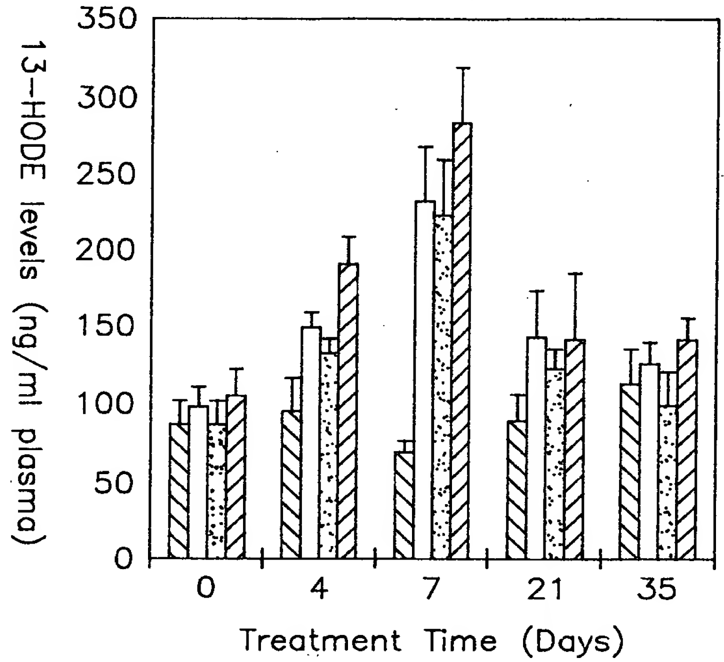


FIG. 4A

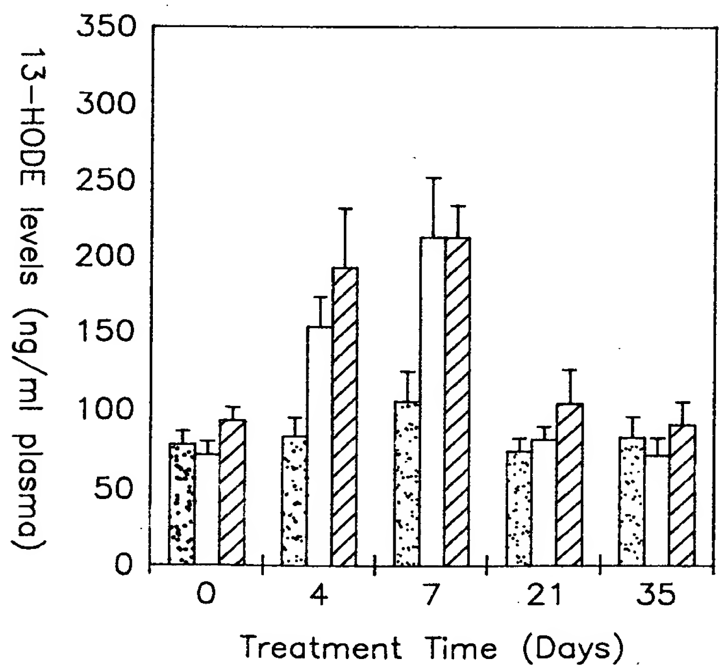


FIG. 5

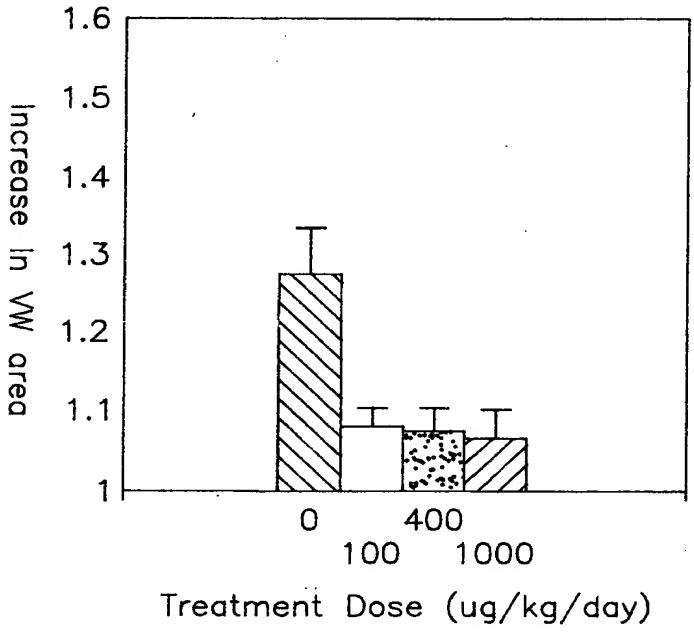


FIG. 5A

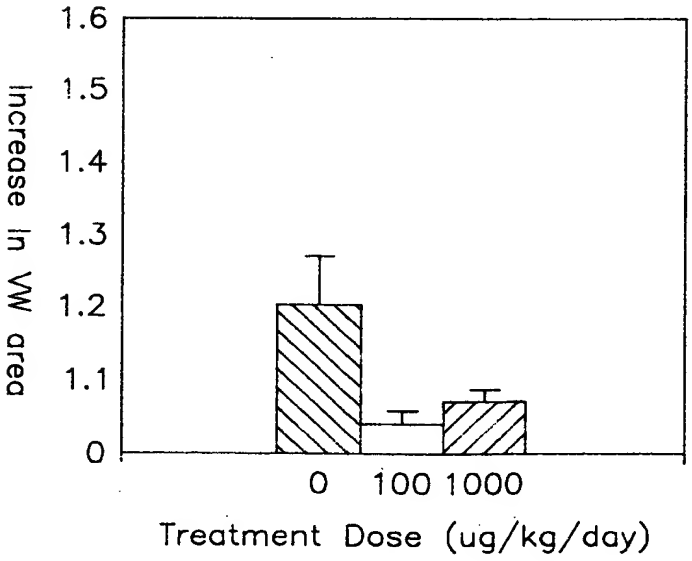
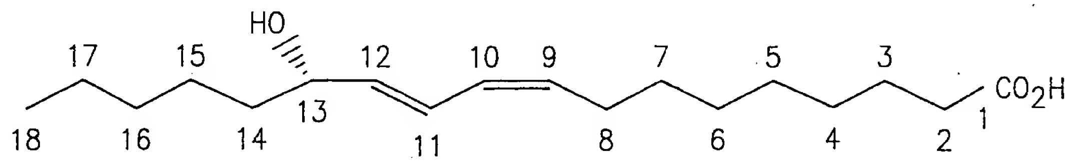


FIG. 6



Proton nmr spectrum (270MHz; $CDCl_3$)

δ(ppm) 6.5(1H, dd, H_{11} $J_{11,10}$ =11Hz, $J_{11,12}$ =15.2Hz), 6.0(1H, t, H_{10}, $J_{10,9}$ =$J_{10,11}$ =11Hz), 5.7(1H, dd, H_{12}, $J_{12,11}$ =15.2Hz, $J_{12,13}$ =6.8Hz), 5.4(1H, dt, H_9, $J_{9,8}$ =7.7Hz, $J_{9,10}$ =10.8Hz), 4.1(1H, m, H_{13}), 2.4(2H, t, H_2, $J_{2,3}$ =7.3Hz), 2.2(2H, m, H_8), 1.6(4H, m, H_3, H_{14}), 1.3(14H, m, H_{17}, H_{16}, H_{15}, H_7, H_6, H_5, H_4) and 0.9 (3H, t, H_{18}, $J_{18,17}$ =6.7Hz).

Carbon-13 nmr spectrum (67.8MHz, $CDCl_3$)

δ(ppm) 179.3(C_1), 135.6(C_{12}), 132.6(C_9), 127.8(C_{10}), 125.8(C_{11}), 72.9(C_{13}), 37.1–22.4(C_{17}, C_{16},C_{15}, C_{14}, C_8, C_7, C_6, C_5, C_4, C_3, C_2) and 13.9(C_{18}).

Infrared spectrum

3500–2500cm $^{-1}$ (broad O–H stretch) and 1709cm^{-1}(C=O stretch)

Ultraviolet spectrum (ethanolic solution)

λmax=232nm (ε ≡ 25,000 mol $^{-1}$ dm ^{3} cm $^{-1}$)

Soluble in ethanol, dichloromethane

Insoluble in hexane, water.